

Convert the given value from radians to degrees or degrees to radians:

1. $\frac{\pi}{12}$

2. $\frac{23\pi}{18}$

3. $\frac{7\pi}{4}$

4. $\frac{29\pi}{45}$

5. $\frac{5\pi}{6}$

6. $\frac{-10\pi}{9}$

7. 108°

8. 360°

9. -72°

10. 3420°

11. $\frac{360^\circ}{\pi}$

12. -135°

Use the given values to determine the desired value:

13. $\theta = \frac{8}{15}$

14. $s = 14\pi$ inches

15. $\theta = \frac{5}{11}$

16. $r = \frac{72ft}{\pi}$

17. $\theta = \frac{35}{14.5}$

18. $s = 9\pi cm$

Find the values of the six trigonometric functions for the following triangles:

19. $\sin \theta = \frac{\sqrt{7}}{4}$ $\cos \theta = \frac{3}{4}$ $\tan \theta = \frac{\sqrt{7}}{3}$ $\csc \theta = \frac{4\sqrt{7}}{7}$ $\sec \theta = \frac{4}{3}$ $\cot \theta = \frac{3\sqrt{7}}{7}$

20. $\sin \theta = \frac{20}{21}$ $\cos \theta = \frac{\sqrt{41}}{21}$ $\tan \theta = \frac{20\sqrt{41}}{41}$ $\csc \theta = \frac{21}{20}$ $\sec \theta = \frac{21\sqrt{41}}{41}$ $\cot \theta = \frac{\sqrt{41}}{20}$

21. $\sin \theta = \frac{3\sqrt{58}}{58}$ $\cos \theta = \frac{7\sqrt{58}}{58}$ $\tan \theta = \frac{3}{7}$ $\csc \theta = \frac{\sqrt{58}}{3}$ $\sec \theta = \frac{\sqrt{58}}{7}$ $\cot \theta = \frac{7}{3}$

22. $\sin \theta = \frac{1}{2}$ $\cos \theta = \frac{\sqrt{3}}{2}$ $\tan \theta = \frac{\sqrt{3}}{3}$ $\csc \theta = \frac{2}{1}$ $\sec \theta = \frac{2\sqrt{3}}{3}$ $\cot \theta = \frac{\sqrt{3}}{1}$

23. $\sin \theta = \frac{11}{27}$ $\cos \theta = \frac{4\sqrt{38}}{27}$ $\tan \theta = \frac{11\sqrt{38}}{152}$ $\csc \theta = \frac{27}{11}$ $\sec \theta = \frac{27\sqrt{38}}{152}$ $\cot \theta = \frac{4\sqrt{38}}{11}$

Solve the following right triangles.

24. $h \approx 19.42$ $b \approx 18.47$ $\alpha = 18^\circ$

25. $h \approx 18.01$ $b \approx 11.34$ $\alpha = 39^\circ$

26. $a \approx 51.98$ $h \approx 56.06$ $\alpha = 22^\circ$

27. $h \approx 49.5$ $b = 45$ $\alpha = 45^\circ$

28. $a \approx 9.44$ $b \approx 27.42$ $\alpha = 71^\circ$

29. $a \approx 15.79$ $b \approx 24.32$ $\alpha = 57^\circ$